

WRIGHT-PATTERSON AIR FORCE BASE

ENVIRONMENTAL ASSESSMENT

TO ENCLOSE

OPEN DITCH #5, AREA C

WRIGHT-PATTERSON AFB, OHIO

FINAL DRAFT REPORT

29 Jan 04

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**FINDING OF NO SIGNIFICANT IMPACT
AND
FINDING OF NO PRACTICABLE ALTERNATIVE**

**Environmental Assessment: Enclose Open Ditch #5, Area C,
Wright-Patterson AFB OH**

An environmental assessment (EA), *Control of Migratory Birds along the Flight Line*, was accomplished in 1999 by Wright-Patterson Air Force Base (WPAFB) that addressed potential actions to reduce bird aircraft strikes near the main runway in Area C. This EA analyzed several proposed actions to help reduce the number of birds frequenting the areas immediately surrounding the runway. The assessment determined that depredation in conjunction with pyrotechnics was the preferred method to accomplish the goal. Depredation activities employ the use of firearms to eliminate target species during predetermined shooting periods. Target species mainly include birds that are carnivorous. For controlling herbaceous species, a humane form of euthanasia is employed in conjunction with pyrotechnics to reinforce the threat of this sound. These methods are currently in use.

Based on a comparison of bird aircraft strike data from years 1995 through 2002 provided by the WPAFB Flight Safety Office, bird aircraft strikes have decreased since the implementation of the depredation measures and pyrotechnic activities. However, there are still enough bird aircraft strikes to warrant additional measures to reduce the number of bird aircraft strike hazards (BASH). An expansive open ditch (identified as Open Ditch #5) is located near the southwest side of the main runway in Area C, which attracts various species of birds to the area.

Description of Proposed Action and Alternatives

The Proposed Action entails the installation of a culvert to enclose Open Ditch #5. This action would include excavating the ditch as needed, inserting culvert pipe into the ditch and filling in around the culvert with soil obtained from within the same floodplain basin. The disturbed area would be seeded with grass to blend into the surrounding region (EA Section 2.1).

Alternative 2 proposes to install a wire mesh grid over the open ditch and parallel to the water level to discourage birds from frequenting the ditch. This grid would be similar in color to surrounding vegetation. While this alternative would deny the

birds' physical access to the ditch, it would still be a visual attractant and would require periodic maintenance of the mesh itself as well as control of vegetation growth (EA Section 2.2).

The No Action alternative would continue to employ existing depredation activities to reduce the BASH. This alternative serves as a baseline against which the Proposed Action can be compared (EA Section 2.3).

Environmental Consequences

All three alternatives would have minimal environmental impacts on the following issues: air quality, water resources, cultural and natural resources, wetlands and noise (EA Sections 4.3.1, 4.4.1, 4.5.1, 4.6.1, 4.7.1, and 4.8.1).

Soils (EA Section 4.1): Under the Proposed Action, there would be short-term, minor negative impacts to soil due to potential erosion from earthmoving activities (EA Section 4.1.1). Soils will also be temporarily disturbed by vehicular and equipment traffic moving into the proposed project area from the nearby road. Although the soils on the ditch slopes have erosion potential, impacts would be minor because erosion controls required by base specifications for construction projects would be implemented. Impacts to soils from Alternative 2 would be minimal and short-term from the installation and periodic maintenance of the wire mesh grid. The No Action alternative would not impact soils or generate any soil erosion activities.

Floodplain (EA Section 4.2): The project area lies within the 100-year floodplain elevation of 814.3 feet above mean sea level. Construction activities from the Proposed Action would include removal of existing soils within the ditch, placement of the culvert and filling in and around the culvert with the excavated soils. Additional fill material including sand and gravel to level and place the culverts would be obtained from within the same floodplain basin to achieve a net zero increase of fill material within the 100-year floodplain. Therefore impacts due to loss or gain of soils within the retention basin are expected to be minimal.

Alternative 2 and the No Action alternative would not impact the floodplain.

Health and Safety (EA Section 4.9): There would be a long-term positive impact on flight safety from the Proposed Action and Alternative 2. Both actions would reduce the number of BASH incidents by removing this open water attractant from birds. There would be a long-term negative impact on flight safety from the No Action alternative since birds would continue to be attracted to the open water.

Environmental Justice (EA Section 4.10): There are no Environmental Justice issues with the implementation of the Proposed Action or any of the alternatives.

Public Notice: A public notice was posted in the Dayton Daily News on 7 Nov 03. The comment period was held from 7 Nov 03 until 6 Dec 03. No comments were received.

Finding of No Significant Impact (FONSI): The Proposed Action entails installing a culvert within Open Ditch #5 to eliminate it as an open water bird attractant. This water source is a BASH because of its close proximity to the active runway at WPAFB, Area C. Alternative 2 entails the placement of a wire mesh grid over the open ditch and parallel to the water level. Under the No Action Alternative, depredation in conjunction with the use of pyrotechnics would continue to be used to deter target bird species from the runway areas. Based on my review of the facts and analysis contained in the EA, I conclude that the Proposed Action, Alternative 2 and the No Action alternative will not have a significant impact. Accordingly, the requirements of the National Environmental Policy Act, the Council on Environmental Quality Regulations and 32 CFR 989 have been fulfilled and an environmental impact statement is not required and will not be prepared.

Finding of No Practicable Alternative (FONPA): Taking the above information into consideration, pursuant to Executive Order (EO) 11988, *Floodplain Management*, EO 11990, *Protection of Wetlands*, and the authority delegated by Secretary of the Air Force order (SAFO) 791.1, I find there is no practicable alternative to the actions proposed in floodplains and wetlands, and that the Proposed Action includes all practicable measures to minimize harm to the environment. This finding fulfills both the requirements of the referenced EOs and the Air Force *Environmental Impact Analysis Process* requirement (32 CFR 989.14) for a Finding of No Practicable Alternative.



RICHARD V. REYNOLDS
Lieutenant General, USAF
Vice Commander, AFMC

15 MAR 04

DATE

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Appendix A	Proposed Site Location Map
Appendix B	Photographs of the Proposed Project Area
Appendix C	Regulatory Letters
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LIST OF ACRONYMS

ABW	Air Base Wing
BASH	bird aircraft strike hazard
CAA	Clean Air Act
CE	Civil Engineering
CO	carbon monoxide
CWA	Clean Water Act
DOPAA	Description of Proposed Action and Alternatives
EA	Environmental Assessment
EM	Office of Environmental Management
FONSI/FONPA	Findings of No Significant Impact and/or a Finding of No Practical Alternative
Ln	Linwood Muck
MCD	Miami Conservancy District
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NOI	Notice of Intent
NO _x	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
OAC	Ohio Administrative Code
ODNR	Ohio Department of Natural Resources
OEPA	Ohio Environmental Protection Agency
PM	particulate matter
PSD	Prevention of Significant Deterioration
RAPCA	Regional Air Pollution Control Agency
SIPs	State Implementation Plans
SO ₂	sulfur dioxide
SWP3	Storm Water Pollution Prevention Plan
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
WPAFB	Wright-Patterson Air Force Base

ENVIRONMENTAL ASSESSMENT - ENCLOSE OPEN DITCH #5

1.0 PURPOSE AND NEED FOR ACTION

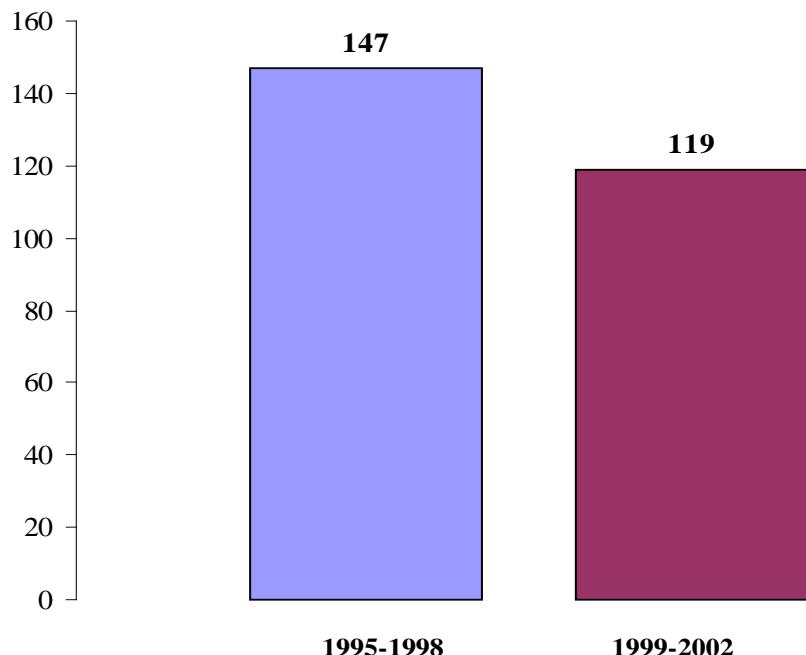
In February 1999, an environmental assessment (EA) was performed at Wright-Patterson Air Force Base (WPAFB) that addressed potential actions to reduce bird aircraft strikes near the main runway located in Area C. The Control of Migratory Birds Along the Flightline EA analyzed several proposed actions to help reduce the number of birds frequenting the areas immediately surrounding the runway. The assessment determined that depredation in conjunction with pyrotechnics was the preferred method to accomplish the goal. Depredation activities use firearms to eliminate target species during predetermined shooting periods and a humane form of euthanasia in conjunction with pyrotechnics to reinforce the threat of pyrotechnic sound. Currently these methods are still in use.

Based on a comparison of bird aircraft strike data from years 1995 through 2002, provided by the Flight Safety Office at WPAFB, bird aircraft strikes have decreased since the implementation of the depredation measures and pyrotechnic activities. From 1995 to 1998, 147 bird aircraft strikes occurred as compared to 119 bird aircraft strikes between 1999 and 2002. Figure 1-1 graphically shows the rate of decrease, which would indicate the pyrotechnic activities (which started in 1999) and depredation measures (which started in March 2002) are working to a degree. Problem bird species associated with the bird aircraft strike hazard (BASH) are outlined in Figure 1-2 and consist of: raptors such as American kestrels and red-tailed hawks; migratory waterfowl such as Canada geese and mallards; shore birds such as sandpipers and killdeer; as well as other non-migratory species such as meadowlarks, mourning doves, swallows, horned larks, swifts, starlings, and scarlet tanagers.

An open ditch (identified as Open Ditch #5) is located near the southwest side of the main runway. A map of the location and photographs of the area are included in Appendices A and B. Open Ditch #5 is approximately 925 feet in length and 35 feet wide (32,375 square feet) and is an attractant to various species of birds (especially shore birds and migratory waterfowl, posing potential strike hazards to WPAFB aircraft on the Area C runway). The WPAFB 88th Air Base Wing Office of Environmental Management (88 ABW/EM) and Civil Engineering (88 ABW/CE) have developed a Proposed Action to further reduce the BASH. The purpose of the proposed action is to eliminate the man-made open water ditch that provides the potential for BASH resulting from birds attracted to the open water in the ditch. This EA will evaluate the proposed action and other alternatives that will aid to limit and further reduce the aircraft collisions associated with the problem bird species by eliminating the open ditch as a source of BASH.

Figure 1-1

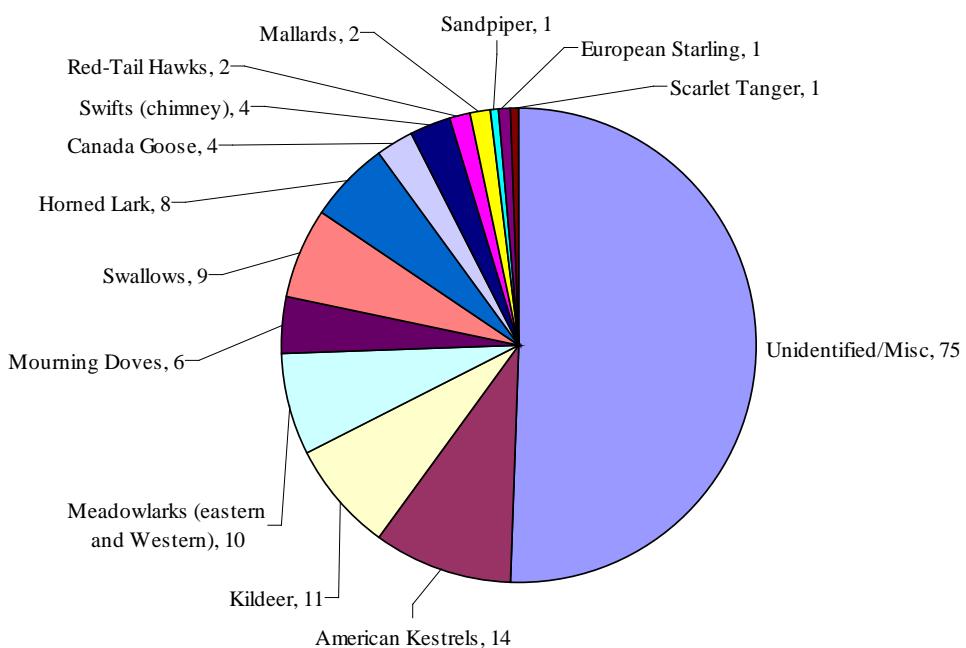
CUMULATIVE STRIKES DURING SPECIFIED PERIOD



Source: Flight Safety Office (WPAFB)

Figure 1-2

TYPE AND NUMBER OF BIRDS STRUCK 1997-2002



Source: Flight Safety Office (WPAFB)

1.1 Project Description

The proposed project location is an open ditch located near the southwest side of the main runway in Area C, which is located in Greene County, Ohio (See Appendix A for a map of the proposed project location and see Appendix B for pictures of the proposed project area). The ditch is located in the fenced runway area and is devoid of vegetation, with the exception of ordinary grasses around its perimeter that cover most of the fenced area near the runways. The ditch receives storm water drainage from the main Area C runway through the National Pollutant Discharge Elimination System (NPDES) Outfall #15. The drainage from the runway flows through the Open Ditch #5 to the Mad River via Trout Creek. Through the Alternative One – Proposed Action, WPAFB has projected to enclose and culvert Open Ditch #5 to limit the BASH. This action would entail excavating the ditch, as needed, inserting culvert pipe into the ditch and removing the presence of the open water in the flightline area. The proposed action would eliminate the man-made open water habitat that serves as a potential bird attractant.

This EA discusses several alternatives and evaluates whether the implementation of the proposed action or any of the other alternatives would result in significant environmental impacts.

1.2 Decision to be Made

The decision to be made as part of this EA is to determine whether to implement the proposed action, i.e. enclosing Open Ditch #5 so that a Finding of No Significant Impact and of No Practicable Alternative (FONSI/FONPA) can be determined.

1.3 Scope of Environmental Analysis

Aspects of the proposed action with potential environmental impacts include:

- Soils
- Floodplain
- Air quality
- Water quality
- Cultural resources
- Natural resources
- Wetlands
- Noise
- Health and safety
- Environmental justice

These issues will be particularly emphasized as part of this environmental impact assessment analysis.

1.4 Regulatory Requirements

A review of each of the categories mentioned above will be performed in regards to applicable regulatory requirements or environmental permitting. The permitting requirements may pertain to requirements listed primarily under the Clean Water Act or Clean Air Act Amendments. The regulatory requirements are listed under each appropriate category in Section 3.0. In addition to any of the permitting requirements applicable to the categories mentioned above, the proposed action would not require a Section 401 certification from the state of Ohio nor a Section 404 permit from the U.S. Army Corps of Engineers.

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA)

2.1 Proposed Action: Enclose and Culvert Open Ditch #5

Alternative One is the proposed action to enclose and place a culvert in Open Ditch #5. The action would entail excavating materials, as needed, from the ditch area and placing culvert pipe into the excavated area. By creating a culvert within the ditch, drainage from the Area C runway can still flow unimpeded to Trout Creek and eventually to the Mad River. The culvert ditch would be covered with soil taken from the excavated area until it is filled to the surrounding ground level. Grass would be allowed to cover the ground to match the existing areas surrounding the ditch. The proposed action would eliminate both the visual and physical attractant of the open water to the birds within the fenced runway area, and help to reduce the BASH.

2.2 Alternative 2: Use Wire Grid to cover Open Ditch #5

Alternative Two would entail the placement of a wire mesh grid over the open ditch and parallel to the water level. Using a wire mesh grid similar in color to surrounding vegetation may deter birds from water within the ditch. If the water continues to be noticed by birds, the wire mesh will at least deny them access to the ditch, which may eventually deter them from coming back. This alternative would eliminate the physical and possibly the visual attractant (depending on material used) of the open water to the birds within the fenced runway area, and help to reduce the BASH. This alternative, however, would not be permanent, and would require periodic maintenance of overgrowing vegetation and the mesh itself.

2.3 No-Action: Continue to Control BASH under the Existing Depredation Permit

Currently, WPAFB uses firearms and euthanasia (USDA personnel feed specific target populations corn that put them to sleep before they are gathered up and humanely euthanized) to destroy target raptor species and pyrotechnics to control other migratory bird species. Based on information provided in Section 1.0 and Figure 1-1, this method of controlling the BASH has been somewhat effective as bird aircraft strikes have decreased since it was implemented.

2.4 Alternatives Eliminated from Further Study

Another alternative that was eliminated from further study proposes to place a chain link fence around the perimeter of the ditch. This alternative, however, would not fulfill the objective of the project as the open water attractant is still visible (especially from the air) and could still potentially lure flying birds. Additionally the open water is still accessible as a potential water source for birds inhabiting the surrounding area. Therefore, no additional analysis will be conducted on this alternative.

2.5 Comparison of Environmental Consequences Between Alternatives

Environmental Consequences	Proposed Action - Enclose and Culvert Ditch	Alternative 2 – Wire Grid to Cover Ditch	No Action – Continue BASH Control Measures
Soils	<ul style="list-style-type: none"> Minimal disturbance from earthmoving activities and vehicle traffic since the culvert ditch would be covered with soil taken from the excavated area Minimal soil erosion from activities with use of straw bales, silt fences and drain mats 	<ul style="list-style-type: none"> Minimal disturbance from vehicle / equipment traffic Minimal soil erosion (if any) possibly from vehicle / equipment traffic (no earth moving activities should eliminate the concern) 	<ul style="list-style-type: none"> No soil disturbance
Floodplain	<ul style="list-style-type: none"> Minimal (if any) disturbance on floodplain since fill material will be brought from another location within same basin 	<ul style="list-style-type: none"> No floodplain disturbance 	<ul style="list-style-type: none"> No floodplain disturbance
Air Quality	<ul style="list-style-type: none"> Minimal fugitive dust resulting from earthmoving and vehicle traffic Minimal vehicle emissions 	<ul style="list-style-type: none"> Minimal fugitive dust resulting from vehicle/equipment traffic (no earthmoving activities) Minimal vehicle emissions 	<ul style="list-style-type: none"> Continue to generate negligible amounts of air emissions during combustion of the pyrotechnics and shot shells
Water Quality	<ul style="list-style-type: none"> Minimal short term water quality disturbance from construction activity May decrease long term sedimentation build-up No Section 401 and 404 storm water permits are required 	<ul style="list-style-type: none"> Minimal (if any) short term water quality disturbance from construction activity No permit required 	<ul style="list-style-type: none"> No water quality disturbance
Cultural Resources	<ul style="list-style-type: none"> No cultural resource disturbance 	<ul style="list-style-type: none"> No cultural resource disturbance 	<ul style="list-style-type: none"> No cultural resource disturbance
Natural Resources	<ul style="list-style-type: none"> No known or identified natural resource disturbance 	<ul style="list-style-type: none"> No known or identified natural resource disturbance 	<ul style="list-style-type: none"> No known or identified natural resource disturbance
Wetlands	<ul style="list-style-type: none"> No Impact 	<ul style="list-style-type: none"> No Impact 	<ul style="list-style-type: none"> No Impact
Noise	<ul style="list-style-type: none"> Minor, short-term impact 	<ul style="list-style-type: none"> Negligible short-term impact 	<ul style="list-style-type: none"> No Impact
Health and Safety	<ul style="list-style-type: none"> Positive impact to BASH 	<ul style="list-style-type: none"> Positive impact to BASH 	<ul style="list-style-type: none"> Negative long-term impact
Environmental Justice	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No impact 	<ul style="list-style-type: none"> No impact

3.0 AFFECTED ENVIRONMENT

Section 3.0 identifies existing environmental conditions at the subject site and the adjacent areas where the proposed action alternative, the use of a screened mesh alternative, and the no action alternative could have an effect.

3.1 Soils

The soil type in the area of the open ditch is Linwood Muck (Ln). This soil type is black and slow draining. It consists of organic materials 16 to 50 inches thick (<16 inches in many areas near the Mad River), which overlie mineral material. Linwood Muck is often located in depressions or basin-like areas on floodplains, stream terraces, and uplands. Permeability in the organic layers is rapid, but moderate in the underlying mineral material (United States Department of Agriculture, Soil Conservation Service 1978).

3.2 Floodplain Issues

WPAFB is located within the Mad River valley of the Great Miami River Basin. The 100-year floodplain elevation of 814.3 feet above mean sea level (MSL) was determined in a study conducted by the U.S. Army Corps of Engineers in 1995. The elevation at the site of the open ditch is approximately 800 feet (MSL) (United States Geologic Survey, 1992) and is primarily flat in the immediately adjacent areas. According to the information provided by the Miami Conservancy District (MCD), the open ditch lies within the Huffman Retarding Basin and is subject to MCD fill regulations.

3.3 Air Quality

According to the Clean Air Act (CAA), National Ambient Air Quality Standards (NAAQS) are to be set by the United States Environmental Protection Agency (USEPA). The NAAQS are designed to limit pollution in the air anywhere in the United States in order to protect human health and public welfare. The NAAQS have been established for six criteria pollutants, which include sulfur dioxide (SO₂), nitrogen oxides (NO_x), particulate matter (PM), carbon monoxide (CO), ozone, and lead. Sections 107 and 110 of the CAA give the responsibility to each state of developing a set of regulations that implement the NAAQS, called State Implementation Plans (SIPs).

In the state of Ohio, the Ohio Environmental Protection Agency (OEPA) is responsible for developing the SIPs and implementing and enforcing the environmental regulatory requirements outlined by USEPA. Locally, in Greene County, the Regional Air Pollution Control Agency (RAPCA), located in Dayton, Ohio, serves as the regulatory agency to enforce OEPA air quality regulations and to protect the citizens of the Miami Valley from impacts of air pollution. Through RAPCA, areas within Clark, Darke, Greene, Miami, Montgomery, and Preble

Counties are monitored for criteria pollutants to determine if the levels meet the criteria pollutant attainment standards. Currently, the areas listed above, including WPAFB, are in attainment for all criteria pollutants.

USEPA has also established Prevention of Significant Deterioration (PSD) to ensure that projects do not deteriorate the quality of air in attainment areas. Areas that are classified as attainment do not have established “de minimis” levels of NAAQS. Therefore, these projects do not have to prepare general Conformity Determinations as would be the case in non-attainment areas. However, no action may proceed if the project has the potential to deteriorate existing attainment air quality.

WPAFB is considered a major source of air pollutants, and submitted an application for a Clean Air Act Title V – Air Quality Operating permit in February 1996. OEPA issued a draft permit in September 2003, identifying all sources of air pollution, applicable regulatory requirements, and emission limits.

3.4 Water Quality

Open Ditch #5 collects storm water and surface drainage from the main WPAFB Area C runway and from NPDES Outfall #15. The drainage from the ditch then flows southwesterly to Trout Creek, which eventually discharges to the Mad River. The proposed project site is directly upstream and in close proximity to Huffman Dam, which is controlled by the MCD.

Under the Clean Water Act (CWA), USEPA has established criteria to protect waters of the U.S. and adjacent waterways from pollution in storm water runoff. The Southwest Ohio Regional Office of OEPA, located in Dayton, Ohio, maintains jurisdiction over waters in Greene County. According to Ohio Administrative Code (OAC) 3745-38-02, no person may discharge any pollutant from a point source without first obtaining National Pollution Discharge Elimination System (NPDES) permit or obtaining authorization to discharge pursuant to an Ohio NPDES general permit. Persons intending to disturb one or more acres of land through construction activities are covered by a general construction storm water discharge permit #OHC000002 if they prepare and implement a storm water pollution prevention plan (SWP3) and file a Notice of Intent (NOI) with OEPA before starting construction.

3.5 Cultural Resources

The proposed activity is located within the fenced runway area but is near the Huffman Prairie Flying Field, a National Historic Landmark which is located between Marl Road and Pylon Road to the southeast of the project area. No archaeological sites or historic buildings are located in the project area.

3.6 Natural Resources

The Ohio Department of Natural Resources (ODNR) Division of Natural Areas and Preserves maintains records of locations known to contain threatened or endangered species as well as unique ecological sites. Based on information contained in a previous EA of the nearby Huffman Prairie Flying Field, there are three species with state protected status which have been observed in the vicinity. The state protected species consist of the eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*), the sedge wren (*Cistothorus platensis*) and the insect Beer's noctuid (*Papaipema beeriana*). A detailed map of the open ditch location was provided to ODNR for evaluation of the presence of any of these species or features at the proposed project site.

Based on information provided in the EA for the Huffman Prairie Flying Field and by the base Natural Resources Program Manager, WPAFB is located within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the clubshell mussel (*Pleurobema clava*). Indiana bat habitat includes dead trees and snags or trees with exfoliating bark, which provide roosting areas. Indiana bats have also been known to use live trees with exfoliating bark as maternity sites.

The clubshell mussel habitat is described in literature obtained from the United States Fish and Wildlife Service (USFWS, 1997) as medium to large rivers in gravel or mixed gravel and sand. It is not anticipated that the man-made ditch would provide the necessary habitat to support the clubshell mussel.

3.7 Wetlands

A wetland delineation was conducted on WPAFB in 1999 (BHE, 1999). A total of approximately 23 acres of wetlands were identified and delineated in Areas B and C. Area C contains 11.65 acres of forested wetlands, 0.68 acres of scrub/shrub wetlands, 5.29 acres of emergent wetlands and 2.28 acres of open water wetlands. The nearest wetland is approximately 1500 feet north of Open Ditch #5.

3.8 Noise

In 1975, WPAFB conducted a comprehensive noise survey and established noise level contours for the base and the surrounding vicinity. The study was updated in 1995. The Air Installation Compatible Use Zone (AICUZ) program, established by the Air Force to address noise and safety concerns associated with military operations, delineated Accident Potential Zones (APZ) based upon the likelihood of aircraft mishaps. Land use is restricted within certain zones due to noise and safety constraints. Open Ditch #5 is located adjacent to APZ1 and APZ2 in the 80dB noise zone.

3.9 Health and Safety

There are two major categories of health and safety issues associated with enclosing the open ditch: safety associated with aircraft approaches and departures from the runways in Area C and safety associated with the installation of the culvert pipes. Open Ditch #5 is an attractant to various species of birds that pose potential strike hazards to aircraft on the Area C runway. Occupational hazards would primarily include hazards associated with heavy equipment and vehicles, power tools and noise.

3.10 Environmental Justice

The purpose of Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, is to identify, address, and avoid disproportionately high and adverse human health or environmental effects on minority and low-income populations.

4.0 POTENTIAL ENVIRONMENTAL IMPACTS

4.1 Soils

4.1.1 Proposed Action

Earthmoving activities would take place as a part of the proposed activity. Soils would be removed from the ditch during construction and placed over the culvert pipes once they are installed. Additional materials, including sand and gravel obtained from within the same floodplain basin to achieve a net zero increase in floodplain materials, would be used to aid in placement and leveling of the piping. Soils will also be temporarily disturbed by vehicular and equipment traffic moving into the proposed project area from the nearby road. Soil erosion during construction activities can be controlled to acceptable levels by following standard erosion controls as required by base specifications for construction projects and the SWP3. Once the project is completed, the area will be re-vegetated to keep impacts and soil erosion to a minimum.

4.1.2 Alternative Two

Soils will be temporarily disturbed during the vehicular and equipment traffic moving into the project area from the nearby road for initial installment and periodic maintenance of the wire mesh grid. Soil erosion during construction activities can be controlled to acceptable levels by following standard erosion controls as required by base specifications for construction projects. There would be no earthmoving activities taking place through the alternative construction activity, so soil erosion should be minimal.

4.1.3 No Action

The no-action alternative will not impact soils or generate any soil erosion activities.

4.2 Floodplain Issues

4.2.1 Proposed Action

Since Open Ditch #5 is located within the 100-year floodplain, development in the area is subject to restrictions set by the Miami Conservancy District detailed in the base General Plan (WPAFB, 1988). The base General Plan specifies that non-structural development is acceptable within the floodplain. Acceptable development includes actions, which do not impede the free flow of floodwaters, do not significantly reduce water percolation into the soil, and do not add a net volume of fill into the floodplain. The proposed action is non-structural, will not restrict the flow of flood water, and will not add an increase of additional fill material into the floodplain since all materials will be from the same floodplain basin on WPAFB. Impacts to water percolation into the soil will be minimal as the ditch is currently used as a storm water conveyance device and is not meant to serve as a storm water retention area.

Conversations conducted with MCD revealed that the MCD is a resource for tracking floodplain management in areas near the Mad River (specifically within the Huffman Retarding Basin). Per a letter provided by the MCD, the proposed closure would be subject to fill regulations. The letter goes on to state, however, that, since the material used for the project would be taken from WPAFB property, no compensation would be required. The amount of material used must be recorded during the construction activity to certify that the material was relocated from another location within WPAFB.

The proposed location is located in a floodplain, contains standing water and also contains hydric soils, which are indicative of wetland areas. However, the ditch is a man-made structure used for the diversion of storm water and there were no aquatic or submerged vegetation noted during the on-site inspection of the proposed site. A review of the base wide wetland management plan (International Consultants, Inc., 2000) does not identify this area as a wetland. Therefore, no impacts to jurisdictional wetlands areas would be encountered during the proposed construction activities.

4.2.2 Alternative Two

Alternative Two is non-structural, will not restrict the flow of flood water, and will not add an increase of additional fill material into the floodplain since no earthmoving activities will take place. This alternative will not impact the floodplain in any manner.

4.2.3 No Action

Since construction activities are not a part of the no-action alternative, it will continue to not impact the floodplain in any manner.

4.3 Air Quality

4.3.1 Proposed Action

Short term increases in fugitive dust will result from the construction activities (earth moving and associated vehicular and equipment traffic) as well as vehicle emissions associated with the proposed action. However, the use of good management practices, that include dampening the soil during excavation, will result in negligible increases in particulate matter during construction activities. Emissions from vehicles and construction activities were conservatively estimated using USEPA AP-42 emission factors and assuming a three month project time. The proposed action is estimated to generate the following emissions, expressed in tons per year: 1.17 NOx, 0.31 VOCs, 0.13 PM10, 2.4 CO and 0.16 SOX. These emissions result in a short-term minor impact to air quality and do not violate any federal, state or local rules. In addition, these emissions do not require any additional permits.

4.3.2 Alternative Two

Short term increases in fugitive dust will result from the initial construction activities and periodic maintenance of the wire mesh (associated vehicular and equipment traffic) as well as vehicle emissions associated with the alternative. Emissions from vehicles and construction activities were conservatively estimated using USEPA AP-42 emission factors and assuming a one month project time. The proposed action is estimated to generate the following emissions, expressed in tons per year: 0.71 NOx, 0.10 VOCs, 0.04 PM10, 0.38 CO and 0.04 SOx. These emissions result in a short-term minor impact to air quality and do not violate any federal, state or local rules. In addition, these emissions do not require any additional permits. This alternative, however, would establish the need for maintenance both on the vegetation growing out from the ditch and over the top of the mesh, and on the mesh itself, creating more temporary fugitive dust and vehicle emissions on a periodic basis. The maintenance on the vegetation may be limited by selecting an opaque mesh type that allows minimal sunlight to enter through the fabric material. Maintenance on the mesh itself depends on the material quality, construction, and type.

4.3.3 No Action

The no action alternative will continue to generate negligible amounts of air emissions during combustion of the pyrotechnics and shot shells which would also be negligible and not trigger any air permitting requirements.

4.4 Water Quality

4.4.1 Proposed Action

Since no new water discharges will be created from the proposed action, the water quality in Trout Creek and the Mad River would not be impacted. Long-term sediment discharges will most likely be slightly improved from the proposed action since the open ditch will no longer be available to obtain direct surface runoff from the surrounding areas that could contain sediment. An increase of sediment into the ditch may occur during construction of the proposed culvert. The area that would be impacted during the proposed activity is less than one acre ($925\text{ft} \times 35\text{ ft} \div 43,560 = 0.74\text{ acres}$). The increase of sediment into the storm water would be minor and would be controlled by the use of standard soil erosion prevention practices that would include the use of straw bales, silt fences and drain mats during construction activities. Construction activity of less than one acre does not require notification to the OEPA or a storm water discharge permit.

4.4.2 Alternative Two

This alternative would not impact the water quality in Trout Creek and the Mad River in any manner since no new

discharges will be created from the construction activity, and earthmoving activities would not occur. Even if a slight increase of sediment into the ditch occurs during the construction of the wire grid mesh, the amount of area that would be impacted during the alternative construction activity (less than one acre) would be minor and should be controlled by the use of standard soil erosion prevention practices. The alternative construction activity does not require notification to the OEPA and will not need a storm water discharge permit under Ohio rules.

4.4.3 No Action

The no-action alternative would continue to not impact water quality since no construction would occur.

4.5 Cultural Resources

4.5.1 Proposed Action

The proposed activity would not affect an area much larger than the existing open ditch and would not impact any of the existing cultural resource areas identified near the proposed site.

4.5.2 Alternative Two

The alternative construction activity would not affect an area much larger than the existing open ditch and would not impact any of the existing cultural resource areas identified near the construction site.

4.5.3 No Action

The no-action alternative is currently being performed under controlled circumstances and would not impact cultural resources at WPAFB.

4.6 Natural Resources

4.6.1 Proposed Action

The proposed project area does not contain any vegetation, other than ordinary grasses, which cover the majority of the area inside of the fenced flightline area. Therefore, no trees or significant vegetation would be impacted during the proposed construction activities. Based on information obtained from ODNR, Natural Heritage files, there are no records of rare or endangered species, proposed state nature preserves or scenic rivers at the proposed project site. ODNR further stated that they were unaware of any unique ecological sites, geologic features, breeding or non-breeding animal concentrations, champion trees, state parks, forests or wildlife areas within the project area.

Information provided during the on-site inspection by the Natural Resources Program Manager of the 88 ABW/EM, information obtained from the Huffman Prairie Flying Field EA, and conversations with the US Fish and Wildlife Service (USFWS) Ohio Field Office indicate that the proposed site and immediate area is not known to contain any federally endangered species. Additionally, the proposed project location does not meet the habitat criteria for either federally endangered species known to the area, the Indiana bat or the clubshell mussel. Therefore, the proposed project should not impact any endangered species. A letter was prepared and sent to USFWS Ohio Field Office in compliance with Section 7 of the Endangered Species Act. The letter with its response are included in Appendix C.

There would be a positive impact to the BASH.

4.6.2 Alternative Two

Alternative Two would not differ from Alternative One since the construction site does not meet the criteria for any federal or local and state endangered species, and no vegetation other than ordinary grasses are present at the site. Therefore the alternative construction activity would not impact any endangered species or existing vegetation.

4.6.3 No Action

Under the no-action alternative there will continue to be no new or additional impacts to natural resources in the area.

4.7 Wetlands

4.7.1 Proposed Action

No wetlands are located within Open Ditch #5. Since the nearest wetland is located approximately 1500 feet north of the project area, there would be no impact to wetlands.

4.7.2 Alternative 2

Since there are no wetlands located within Open Ditch #5, there would be no impact to wetlands from this alternative.

4.7.3 No Action

Wetlands would not be impacted under the No Action alternative.

4.8 Noise

4.8.1 Proposed Action

Because the project site is located on an active Air Force base, noise levels associated with aircraft are experienced daily. Open Ditch #5 is located in the 80dB noise zone. Impacts on ambient noise levels from the work area would result from the operation of heavy machinery and equipment. There would be a minor, negative short-term impact from noise at the project site during the construction phase. There would be no long-term impacts from the Proposed Action.

4.8.2 Alternative 2

There would be a negligible impact to noise from Alternative 2 since no heavy equipment would be used to install the wire grid over the open ditch.

4.8.3 No Action

The No Action alternative would have no effect on noise levels.

4.9 Health and Safety

4.9.1 Proposed Action

The Proposed Action would have a positive impact on safety by eliminating the physical and visual open water attractant to birds, thus reducing BASH incidents. There would be a long-term positive impact to safety from implementation of the Proposed Action. The potential for impacts upon the safety of workers involved in the installation of the culvert pipes would be short-term in nature because workers would be responsible for adhering to applicable health and safety regulations.

4.9.2 Alternative 2

Alternative 2 would have a positive impact on safety since it would eliminate the physical and possibly the visual attractant of the open water to birds. This alternative would be less effective than the Proposed Action since it would require periodic maintenance of overgrowing vegetation and the wire mesh itself.

4.9.3 No Action

The No Action alternative would have a negative, long-term impact to safety since the existing open water conditions would continue to attract birds that would cause BASH incidents.

4.10 Environmental Justice

4.10.1 Proposed Action

There is little potential for the Proposed Action to have a disproportionately high and adverse human health or environmental effect on low-income and minority populations that are located outside the boundaries of WPAFB. The area of the Proposed Action is located in a remote area of the base with no inhabitants within the area of potential effect. There would be no substantial economic ramifications resulting from the Proposed Action. There would also be little change in facility operations following completion of the project. The absence of nearby populations (including low-income and minority populations), the limited scope of the Proposed Action, and minimal effects do not present conditions for an Environmental Justice issue.

4.10.2 Alternative 2

Similarly, there would be no Environmental Justice issues with the implementation of Alternative 2.

4.10.3 No Action

There would be no Environmental Justice issues with the No Action alternative.

5.0 LIST OF PREPARERS

The EA was prepared by the Dayton, Ohio office of Jones Technologies, Inc. and the persons involved with the preparation of the document are:

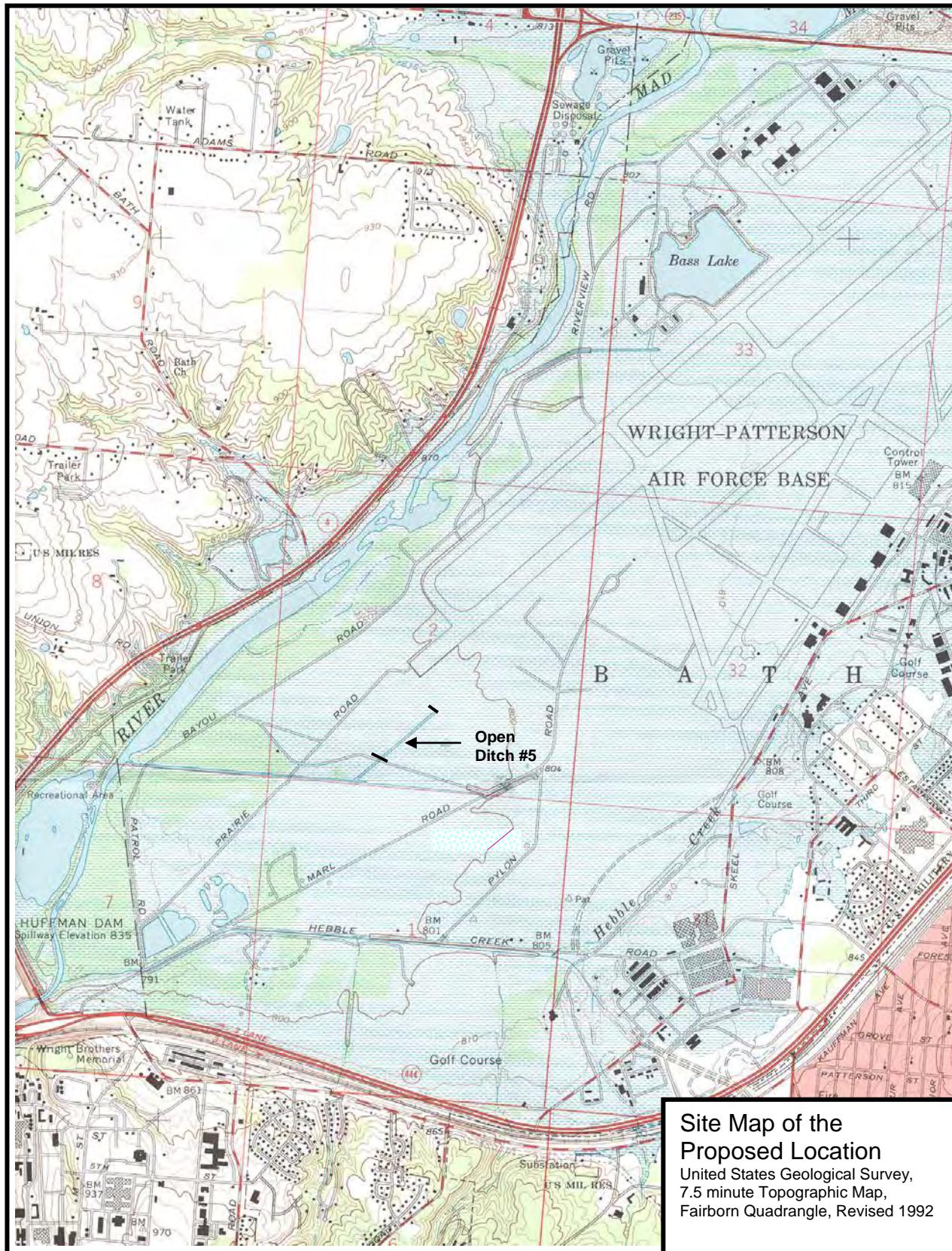
Person	Title	Role
David Paul	Senior Environmental Scientist	Report Preparation
Matthew Garr	Environmental Scientist	Report Preparation
Richard Tibbitts	Program Manager	Report Review
Thomas J. Walker	Program Manager	Report Review
Dr. Michael J. Moran	Principal Scientist, Tetra Tech, Inc.	Report Review

6.0 LIST OF PERSONS CONTACTED

Several persons were contacted or consulted during the preparation of the EA, the persons contacted are listed below:

Person	Organization	Subject
Tom Perdue	88 ABW/EMO	Primary Point of Contact
Terri Lucas	88 ABW/EMO	Natural Resources Data
John Fuller	WPAFB-88 ABW/CE	Project Information
Don Smith	WPAFB-88 ABW/CE	Flood Plain Information
Major Walter Jackson	WPAFB – Flight Safety Office	BASH Data
Bruce Pletsch	MCD	Floodplain Information
Debbie Woischke	ODNR	Natural Resources Data

APPENDIX A
PROPOSED SITE LOCATION MAP



APPENDIX B
PHOTOGRAPHS OF THE PROPOSED PROJECT AREA



Photograph #1 - Proposed project location from the southwest



Photograph #2 – Culverts where open ditch flows beneath access road

APPENDIX C
REGULATORY LETTERS



JONES TECHNOLOGIES

January 20, 2003

Dr. Mary Knapp
U.S. Fish and Wildlife Service (USFWS)
6950-H Americana Parkway
Reynoldsburg, OH 43068-4127

Subject: Endangered Species Act Information for Environmental Assessment
Wright-Patterson Air Force Base, Dayton, Ohio

Dear Dr. Knapp:

Jones Technologies, Inc. is conducting an Environmental Assessment to enclose and place a culvert in an open ditch located near the main runway in Area C at Wright Patterson Air Force Base (WPAFB). The man-made ditch covers less than one acre and is located to the southwest side of the main runway. A copy of the site map of the proposed project location is attached. We are requesting that you provide consultation with regards to endangered species to help fulfill our requirements for complying with Section 7 of the Endangered Species Act.

Based on a recent telephone conversation with Ms. Megan n Seymour of USFWS Ohio Field Office, WPAFB is located within the range of the federally endangered Indiana bat (*Myotis sodalis*) and the clubshell mussel (*Pleurobema clava*).

Indiana bat habitat includes dead trees and snags or trees with exfoliating bark, which provide roosting areas. Indiana bats have also been known to use live trees with exfoliating bark as maternity sites. The proposed project location is a man-made open ditch with no trees present. Vegetation surrounding the ditch consists of ordinary grasses that cover all unpaved areas within the fenced runway area. Therefore, no impact to the potential habitat of the Indiana Bat is anticipated.

The clubshell mussel habitat is described in literature (USFWS, 1997), as medium to large rivers in gravel or mixed gravel and sand. It is not anticipated that the man-made ditch would provide the necessary habitat to support the clubshell mussel.

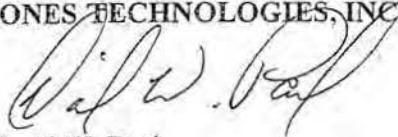
Additionally based my conversation with Ms. Seymour she indicated that the eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*) was currently a state endangered species and is candidate species for the endangered species list. A review of habitat information for the eastern massasauga rattlesnake indicates the snakes prefer wetland areas, wet meadows, sedge meadows and early successional fields (Ohio Department of Natural Resources Life History Notes). The report states that the eastern massasauga rattlesnakes avoid open water and seem to prefer the cover of broad-leaved plants, emergents and sedges. Based on this information, we would not be impacting the habitat of this species with our proposed project.

As stated above we do not feel that our proposed project will have any impact on the endangered species that potentially inhabit the area of the proposed project. Please review this information and provide return correspondence if you concur with our assessment.

If you have any questions or comments, please do not hesitate to contact me at (937) 256-1558. Your consideration in this matter is most appreciated.

Sincerely,

JONES TECHNOLOGIES, INC.



David W. Paul
Senior Environmental Scientist

Attachments

DWP:kjm



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
6950 Americana Parkway, Suite H
Reynoldsburg, Ohio 43068-4127

(614) 469-6923
Fax: (614) 469-6919

March 10, 2003

Mr. David Paul
Jones Technologies
5100 Springfield Pike, Suite 305
Dayton, OH 45431

Dear Mr. Paul:

This is in response to your January 20, 2003 letter requesting information we may have regarding the occurrence or possible occurrence of Federally-listed threatened or endangered species within the vicinity of the proposed site. The project is located on the Wright-Patterson Air Force Base (WPAFB), located in Dayton, Montgomery and Greene Counties, Ohio. The project involves the culverting of 925 linear feet of a man-made drainage ditch, located on the southwest side of the main runway. Currently, the site is composed of the ditch, and is surrounded by grass that is mowed regularly. The ditch has been dredged in the past, and its substrate is composed of silt and mud. No instream vegetation is present, and no riparian vegetation exists.

There are no Federal wilderness areas, wildlife refuges, or designated Critical Habitat within the vicinity of the proposed site.

ENDANGERED SPECIES COMMENTS: The proposed project lies within the range of the **Indiana bat** (*Myotis sodalis*), a Federally listed endangered species. Indiana bats use live and dead trees with exfoliating bark for summer habitat. Indiana bats are known to exist on WPAFB property, however due to the type of habitat present on the site, it is unlikely that the project area provides habitat for the bat.

The project lies within the range of the **clubshell mussel** (*Pleurobema clava*), a Federally listed endangered species. The clubshell mussel is also known from WPAFB property, namely in the Little Miami River. Due to the project area being composed of a man-made ditch, it is unlikely that this waterway contains suitable clubshell habitat.

The project also lies within the range of the **eastern massasauga** rattlesnake (*Sistrurus catenatus catenatus*), a Federal candidate species and State endangered species. This species is also known to occur on WPAFB property, within the vicinity of the Prime BEEF training area and adjacent golf course. This is south of the proposed project. The massasauga is often found in or near wet areas, including wetlands, wet prairie, or nearby woodland or shrub edge habitat. The Service believes that suitable habitat for the massasauga does not exist on the project site. However, the snake is very mobile and sometimes may travel through unsuitable habitat to reach adjacent habitat parcels. The project designers should notify all people that may be working on the project (including contractors, engineers, machine operators, etc.) that the eastern massasauga exists on WPAFB, that the snake is poisonous and should not be handled, and that the snake is a protected species and should not be harmed or killed. The project area should be examined daily for snakes, and if any eastern massasaugas are found, all work should cease and this office should be contacted immediately. Enclosed is the Service's Eastern Massasauga Factsheet to aid in identification of any massasaugas that may be found on site.

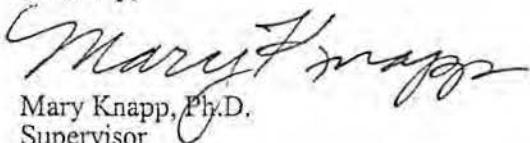
Provided that the above guidelines are followed, the project, as proposed, is not likely to adversely affect the Indiana bat, clubshell mussel, or eastern massasauga. This precludes the need for further action on this project as required by the 1973 Endangered Species Act, as amended.

Should additional information on listed or proposed species or their critical habitat become available or if new information reveals effects of the action that were not previously considered, this determination may be reconsidered. If project plans change or if portions of the proposed project were not evaluated, it is our recommendation that you contact our office for further review.

This technical assistance letter is submitted in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C.661 et seq.), the Endangered Species Act of 1973, as amended, and is consistent with the intent of the National Environmental Policy Act of 1969, and the U.S. Fish and Wildlife Service's Mitigation Policy.

If you have questions, or if we may be of further assistance in this matter, please contact Megan Seymour at extension 16 in this office.

Sincerely,

A handwritten signature in black ink, appearing to read "Mary Knapp".

Mary Knapp, Ph.D.
Supervisor

cc: ODNR, DOW, SCEA Unit, Columbus, OH



Ohio Department of Natural Resources

BOB TAFT, GOVERNOR

SAMUEL W. SPECK, DIRECTOR

Division of Natural Areas and Preserves

Nancy Strayer, Acting Chief
1889 Fountain Square, Bldg. F-1
Columbus, OH 43224-1388
Phone: (614) 265-6453; Fax: (614) 267-3096

January 7, 2003

Matthew Garr
Jones Technologies, Inc.
5100 Springfield Pike
Suite 305
Dayton, OH 45431

Dear Mr. Garr:

After reviewing our Natural Heritage maps and files, I find the Division of Natural Areas and Preserves has no records of rare or endangered species in the Open Ditch #5 Enclosure project area within Area C at Wright-Patterson Air Force Base, Greene County, Fairborn Quad.

There are no existing or proposed state nature preserves or scenic rivers at the project site. We are also unaware of any unique ecological sites, geologic features, breeding or non-breeding animal concentrations, champion trees, or state parks, forests or wildlife areas within the project area.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Please note that although we inventory all types of plant communities, we only maintain records on the highest quality areas. Also, we do not have data for all Ohio wetlands. For National Wetlands Inventory maps, please contact Madge Fitak in the Division of Geological Survey at 614-265-6576.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

A handwritten signature in black ink that reads "Debbie Woischke".

Debbie Woischke, Data Specialist
Division of Natural Areas & Preserves



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 88TH AIR BASE WING (AFMC)
WRIGHT-PATTERSON AIR FORCE BASE OHIO

10 Feb 03

88 ABW/EMO
5490 Pearson Road, Building 89
Wright-Patterson Air Force Base, Ohio 45433-5332

Mr. Richard L. Doran
Property Administrator
Miami Conservancy District
38 E. Monument Avenue
Dayton, Ohio 45402-1271

Subject: Environmental Assessment for Enclosing Open Ditch #5, Area C, WPAFB

Dear Sir:

Under Executive Order 11988, the U.S. Air Force is providing information to the Miami Conservancy District regarding potential floodplain impacts associated with the proposed project to enclose an open ditch at the end of the active runway at Wright-Patterson Air Force Base (WPAFB). WPAFB has initiated an environmental assessment (EA) for the project in accordance with the requirements of the National Environmental Policy Act of 1969.

The proposed action alternative consists of enclosing the open ditch by installing a culvert and filling in the ditch with soil removed from the ditch. Any additional soil required to cover the culvert would be obtained from within the WPAFB floodplain basin with the intention of creating no net increase in the amount of soil within the floodplain. The area to be culverted is approximately 925 feet in length and 35 feet in width (32,375 sq feet). This action would continue to allow for the free flow of waters and would not add a net volume of fill into the floodplain.

The EA that is presently being conducted for enclosing the open ditch will address the addition or loss of flood control capacity (if any), and the generation of any additional runoff from the new construction. As part of the scoping process, we would appreciate your comments regarding the level of significance that the proposed project may have on the Miami Conservancy District.

If you need further information or have comments on the proposed project, please contact me at (937) 257-5535, ext. 257. Thank you for your assistance.

Sincerely,

Thomas Perdue
EIAP Program Manager
Office of Environmental Management



MIAMI
CONSERVANCY
DISTRICT

BOARD OF DIRECTORS
William H. Hobart
Gayle B. Price, Jr.
Thomas B. Rentschler
GENERAL MANAGER
Janet M. Bly

May 1, 2003

Mr. Thomas Perdue
88 ABW/EMO
5490 Pearson Road, Building 89
Wright-Patterson Air Force Base, Ohio 45433-5332

Re: Huffman Retarding Basin, WPAFB, enclosure of Open Culvert

Dear Mr. Perdue:

In response to your letter date February 10, 2003 we have reviewed the proposed culvert modification. As the culvert is located within the Huffman Retarding Basin the proposed closure would be subject to our fill regulations.

Based on the proposed plan it appears an area of approximately 32,375 square feet is to be re-graded. As the material used for the proposed project is to be taken from your property (WPAFB) no compensation will be required. Upon project completion please sign this letter, verifying the amount of material used to complete the project and certifying that all material was relocated from another location within WPAFB, and return it to the District.

Authorized Signature

Date

Should you have any further questions or need additional information please contact me at (937) 223-1278, Ext. 3219.

Very truly yours,

Richard L. Doran
Property Administrator

cc: Bill Bogan

File: Storage Compensation Agreement No. 0110

APPENDIX D

REFERENCES

REFERENCES

Wright Patterson Air Force Base (WPAFB), Bird Control, Environmental Assessment, February 22, 1999.

United States Department of Agriculture, Soil Conservation Service, Soil Survey of Greene County, Ohio, 1978.

United States Geologic Survey, 7.5 Minute Series Topographic Map, Fairborn, Ohio Quadrangle, Revised 1992.

Environmental Assessment, Enhancements to Huffman Prairie Flying Field, Office of Environmental Management, Wright Patterson Air Force Base (WPAFB), October 12, 2001

Habitat Description of *Pleurobema clava*, USFWS, December 12, 1997 (obtained from Website).

Base Comprehensive Plan, Component Plan D, Land Use Plan, WPAFB, 1988.

Base Wide Wetland Management Plan, International Consultants, Inc. February 2000.